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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FISCHER, MARK L	

ART UNIT	PAPER NUMBER
2627	

NOTIFICATION DATE	DELIVERY MODE
06/12/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/589,267	SATO, KATSUTOSHI	
	Examiner	Art Unit	
	MARK FISCHER	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 2, 4, 5, 7, 8, and 10-14 are currently amended, claims 3 and 9 are original, claim 6 is as previously presented, and claims 15 and 16 are new.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 28, 2009 and May 20, 2009 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4, 6-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US Pub. No. 2004/0114495 A1, hereinafter Kim) in view of Ogasawara (US Pat. No. 6,141,304).

Regarding claim 1, Kim discloses an optical pick-up device (Fig. 2) comprising: a first light emitting element (11) for emitting first light beams (11a) having a first wavelength; a second light emitting element (20) for emitting second light beams (21a) having a second wavelength; a third light emitting element (30) for emitting third light beams (31a) having a third wavelength; a first optical system including a first object lens (45), and serving to converge, by the first object lens, one of the first, second, or third light beams emitted from the first, second, or third light emitting element to irradiate the light beams thus converged by the first object lens (45) onto an optical disc (see Fig. 3); a second optical system including a second object lens (41), and serving to converge, by the second object lens, one of the first, second, or third light beams emitted from the first, second, or third light emitting element to irradiate the light beams converged by the second object lens (41) onto the optical disc (see Fig. 3); an object lens drive unit (Fig. 3, element 40) including a bobbin (50) that holds the first and second object lenses, and serves to allow the bobbin to undergo a drive displacement in a focusing direction perpendicular to a recording surface of the optical disc, a tracking direction which is a substantially radial direction of the optical disc, and one of a radial tilt direction in which movement is performed in a circular arc form on the axis of the radial direction and a tangential tilt direction in which movement is performed in a circular arc form on an axis of a tangential direction which is a direction perpendicular to the radial direction (¶ [0130]); and a comatic aberration correcting

means for correcting comatic aberration of the second optical system relatively taking place with respect to the first optical system in one of the radial tilt direction and the tangential tilt direction, which is not controlled by the object lens drive unit, (¶¶ [0118], [0119], [0192] and [0193]). While Kim discloses aberration correcting means that affects aberration correction in an optical path of the second optical system while not affecting an optical path of the first optical system (i.e. out of an optical path of the first optical system), Kim does not explicitly disclose that the aberration correcting means is arranged in an optical path of the second optical system between one of the first, second, or third light emitting element and the second optical system. However, Ogasawara discloses (see Fig. 1) that comatic aberration can be corrected (Col. 7, lines 59-65) by arranging an aberration correcting means (3) in an optical path of an optical system (5) between a light emitting element (1) and the optical system (5). Since Kim discloses aberration correcting means for the light paths of the second optical system (41) and the absence of aberration correcting means for the light path of the first optical system (45), it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the aberration correcting means of Kim with the aberration correcting means of Ogasawara, such that aberration is corrected while the aberration correcting means remains out of an optical path of the first optical system (45) of Kim. The motivation for combination would be to substitute the aberration correcting means of Kim with another well-known aberration correcting means.

Regarding claim 2, Ogasawara discloses that the comatic aberration correcting means corrects comatic aberration by changing a refractive index of a region intersecting a path of one of the first, second, or third light beams (Col. 7, lines 59-65).

Regarding claim 3, Kim discloses that the first wavelength is about 405 nm (¶ [0089]), the second wavelength is about 660 nm (¶ [0092]), and the third wavelength is about 785 nm (¶ [0093]).

Regarding claim 4, Kim discloses that (see Fig. 2) the first light beams having the first wavelength (11a) are incident on the first object lens (45), and the second light beams having the second (21a) and third (31a) wavelengths are incident on the second object lens (41).

Regarding claim 6, Ogasawara discloses that the aberration correcting means includes a liquid crystal correcting device (Col. 7, lines 59-65).

Regarding claim 7, Kim discloses an optical disc apparatus (Fig. 2) comprising: a disc rotational operation means (19) for performing rotational operation of an optical disc; and an optical pick-up device (Fig. 2) configured to scan, by light beams, a signal recording surface of an optical disc operated by the disc rotational operation means to perform recording or reproduction of information, the optical pick-up device comprising: see rejection of claim 1.

Regarding claim 8, Ogasawara discloses that the comatic aberration correcting means changes a refractive index of a region intersecting a path of the first, second, or third light beams (Col. 7, lines 59-65).

Regarding claim 9, Kim discloses that the first wavelength is about 405 nm (¶ [0089]), the second wavelength is about 660 nm (¶ [0092]), and the third wavelength is about 785 nm (¶ [0093]).

Regarding claim 10, Kim discloses that (see Fig. 2) the first light beams having the first wavelength (11a) are incident on the first object lens (45), and the second and third light beams having the second (21a) and third (31a) wavelengths are incident on the second object lens (41).

Regarding claim 12, Ogasawara discloses that the aberration correcting means includes a liquid crystal correcting device (Col. 7, lines 59-65).

Regarding claim 13, see the rejection of claim 1.

Regarding claim 14, Ogasawara discloses applying a voltage to a liquid crystal correcting device in the optical pick-up device to control a refractive index to correct the comatic aberration (Abstract and Col. 7, lines 59-65).

6. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Ogasawara further in view of Kanaya et al. (US Pub. No. 2006/0077784 A1, hereinafter Kanaya).

Regarding claim 5, Kim discloses that a center of the second object lens and a center of the first object lens are held at the bobbin along the radial direction (see Fig. 6), but does not disclose that the first and second object lenses are held at the bobbin in the state arranged in the tangential direction. However, Kanaya discloses arranging first and second object lenses in a tangential direction (see Fig. 4B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kim in view of Ogasawara with Kanaya with the motivation to allow the objective lens disposed on the outer side to access a region of a disk at the innermost periphery (¶ [0008]).

Regarding claim 11, Kim discloses that a center of the second object lens and a center of the first object lens are held on the bobbin along the radial direction (see Fig. 6), but does not disclose that the first and second object lenses are held at the bobbin in the state arranged in the tangential direction. However, Kanaya discloses arranging first and second object lenses in a

tangential direction (see Fig. 4B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kim in view of Ogasawara with Kanaya with the motivation to allow the objective lens disposed on the outer side to access a region of a disk at the innermost periphery (¶ [0008]).

7. Kim in view of Ogasawara further in view of Horinouchi et al. (U.S. Pat. No. 7,301,864 B2, hereinafter Horinouchi).

Regarding claim 15, Kim discloses that each of the first and second object lenses (45 and 41) includes a converging portion (well-known that in Fig. 3, the lights 11a, 21a, and 31a are being converged when passing through lenses 45 and 41) and a flange configured to connect to the bobbin surrounding the converging portion (in Fig. 3, the outer portions of 41 and 45 are flanges which are well-known to be used to connect the lenses to the bobbin 50). Kim does not explicitly disclose that a portion of the flange of one of the first and second object lenses is removed and the other one of the first and second object lenses is arranged to overlap the portion of the flange that is removed. However, Horinouchi discloses a portion of a flange (Fig. 43, elements 232u, 232d, 266) of one of the first and second object lenses (232) is removed and the other one of the first and second object lenses (Fig. 42, element 233) is arranged to overlap the portion of the flange that is removed (as seen in Fig. 42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kim in view of Ogasawara with Horinouchi with the motivation to better adjust the objective lenses while still keeping the two lenses closely spaced in order to minimize errors.

Regarding claim 16, see the rejection of claim 15.

Response to Arguments

8. Applicant's arguments filed 4/28/2009 have been fully considered but they are not persuasive.

Applicant argues (Remarks, Page 11, lines 5-10 and 15-20) that Kim and Ogasawara fail to teach or otherwise suggest an optical pick-up device comprising first and second optical systems each including an object lens used with a comatic aberration correcting means for correcting a comatic aberration arranged in an optical path of the second optical system between one of the first, second, or third light emitting element and the second optical system and arranged out of an optical path of the first optical system. However, Kim discloses exclusively correcting comatic aberration caused by the second and third light beams (21a and 31a) incident on the objective lens 41 by comatic aberration correcting means (moving 20 and 30) which only affects the light in the optical paths of the second and third light beams (21a and 31a) and does not affect the light in the optical path of the first light beam (11a). In addition, Ogasawara discloses that a well-known way of correcting comatic aberration is by placing an optical system (3) in the optical path of a light beam, which could be used as a substitute for the correcting means of Kim. Thus, the combination of Kim with Ogasawara would result in the optical system of Ogasawara being placed into the optical paths of the second and third light beams of Kim, and not into the optical path of the first light beam of Kim because Kim already discloses that the aberration correcting means (20 and 30) do not apply to the first light beam (11a).

Applicant argues (Remarks, Page 11, lines 10-14 and 21-24) that the references fail to teach or suggest a comatic aberration correcting means for correcting a comatic aberration of the

second optical system relatively taking place with respect to the first optical system in one of the radial tilt direction and the tangential tilt direction that is not controlled by the object lens drive unit. However, Kim discloses correcting comatic aberration by moving the second and third optical units 20 and 30 within a plane perpendicular to an optical axis along which the second and third light beams travel (¶ [0118]). Since 20 and 30 correct aberration by moving within a plane (i.e. aberration in any direction), then they are inherently correcting aberration with respect to the first optical system in a direction not controlled by the object lens drive unit.

Applicant argues (Remarks, Page 12, line 6 Page 14, line 6) that Ogasawara teaches away from using two objective lenses, and from using a separate tilt correcting means. However, the teachings of Ogasawara pointed out by the Applicant are not relevant to the combination of Kim in view of Ogasawara. Ogasawara was used as a reference because of its teaching that comatic aberration can be corrected by means of an optical system in the optical path of a light beam, where the additional teachings of Ogasawara cited by the Applicant are for a two light beam system, whereas the teachings of Kim are for a three light beam system which means that more compromise must be made for the three light beam system that would not ordinarily apply to a two light beam system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK FISCHER whose telephone number is (571) 270-3549. The examiner can normally be reached on Monday-Friday from 9:00AM to 6:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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